

What is claimed is:

1. A manufacturing method for a three-dimensional structural body, comprising:

sequentially bonding/transferring and laminating a plurality of cross-sectional form members, each being held in space above a first substrate by a holding member and corresponding to a slice pattern of a three-dimensional structural body, onto a second substrate.

2. The manufacturing method according to claim 1, wherein the bonding/transferring is performed using surface-activated bonding.

3. The manufacturing method according to claim 1, wherein the holding member comprises a coupling member connected to the cross-sectional form member, and a frame member provided between the coupling member and the first substrate.

4. The manufacturing method according to claim 3, wherein the frame member includes a columnar part provided on the first substrate, and a frame part provided on the columnar part and connected to the coupling member.

5. The manufacturing method according to claim 4, further comprising:
laminating a sacrificial layer and a material layer on the first substrate;
forming the cross-sectional form members, the frame part and the coupling member in the material layer; and

removing the sacrificial layer while a portion becoming the columnar part remains, and a gap occurs at least between the cross-sectional form member and the first substrate.

6. The manufacturing method according to claim 5, wherein the cross-sectional form members are formed by using a lithography method.

7. The manufacturing method according to claim 5, wherein the sacrificial layer is removed by using an under etching method.

8. The manufacturing method according to claim 3, wherein the coupling member is ruptured at a time of the bonding/transferring.

9. The manufacturing method according to claim 1, wherein the bonding/transferring is performed by causing the cross-sectional form members to face the second substrate, and by sandwiching the cross-sectional form members between the first substrate and the second substrate.

10. The manufacturing method according to claim 3, wherein the bonding/transferring is performed by causing the cross-sectional form members to face the second substrate, and by sandwiching the cross-sectional form members between the first substrate and the second substrate, and

the coupling member is ruptured after the cross-sectional form members are transferred on the second substrate and when the second substrate is separated from the first substrate.

11. The manufacturing method according to claim 9, wherein a surface on the first substrate facing the cross-sectional form members is flat.

12. The manufacturing method according to claim 10, wherein a surface on the first substrate facing the cross-sectional form members is flat.

13. The manufacturing method according to claim 9, wherein a pressure to sandwich the cross-sectional form members between the first substrate and the second substrate is applied to the whole cross-sectional form members.

14. The manufacturing method according to claim 10, wherein a pressure to sandwich the cross-sectional form members between the first substrate and the second substrate is applied to the whole cross-sectional form members.

15. The manufacturing method according to claim 1, wherein the holding member comprises a first frame member positioned on the first substrate, a second frame member provided inside of the first frame member, a first coupling member connected to the cross-sectional form member, and a second coupling member connecting the first and the second frame members.

16. The manufacturing method according to claim 15, wherein the second frame member and the plurality of cross-sectional form members connected to the second frame member are simultaneously bonded and transferred onto the second substrate.

17. The manufacturing method according to claim 16, wherein the bonding/transferring is performed by causing the plurality of cross-sectional form members and the second substrate to face each other, and by sandwiching the second frame member and the plurality of cross-sectional form members between the first substrate and the second substrate.

18. The manufacturing method according to claim 1, wherein the three-dimensional structural body includes a photonic crystal having a periodic structure.